## Max-Planck-Institut für Struktur und Dynamik der Materie



Max Planck Institute for the Structure and Dynamics of Matter

## November 3<sup>rd</sup> 2015 – 16:00 CFEL Seminar room IV, 01.111 (Bldg. 99)

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## Dynamics of screening in photo-doped Mott insulators

We will present a non-equilibrium implementation of the extended dynamical mean field (EDFMT) theory to study the effect of dynamical screening in photo-excited Mott insulators, which are modelled by extended Hubbard model. The insertion of doublons and holes adds low-energy screening modes and leads to a reduction of the Mott gap. The coupling to low-energy bosonic modes furthermore opens new relaxation channels and significantly speeds up the thermalization process.

We will present the effect of the energy distribution of the doped carriers on the screening. The combination of the EDMFT with GW method allows us to treat the effects of the nonlocal correlations, which leads to the modifications of the screening dynamics. We will demonstrate the effects of the nonlocal correlations in and out of the equilibrium.

